



**Missouri  
Department of  
Natural Resources**

**EAST FORK LOCUST CREEK  
WBID 608**

**Recreational Use Attainability Analysis**

May 2007

PREPARED FOR:  
RFP No: B3Z07134  
Water Quality Monitoring & Assessment Section  
Water Protection Program  
Division of Environmental Quality  
**MISSOURI DEPARTMENT OF NATURAL RESOURCES**  
P O Box 176  
Jefferson City, MO 65102

PREPARED BY:  
**MEC WATER RESOURCES, INC.**  
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Columbia, MO 65201

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet A - Water Body Identification

#### I. Water Body Information (For water body being surveyed)

Water Body Name (from USGS 7.5' quad):	<i>East Fork Locust Creek</i>		
Missouri Water Body Identification (WBID) Number:	<i>608</i>		
8-digit HUC:	<i>10280103</i>	County:	<i>Sullivan</i>
Upstream Legal Description (from Table H):	<i>Hwy 6</i>		
Downstream Legal Description (from Table H):	<i>Mouth</i>		
Number of sites evaluated	<i>9</i>		
List all sites numbers, listed consequently upstream to downstream: 1 - E. THIRD STREET      2 - HWY C 3 - ROLLING ROAD      4 - 200 m DOWNSTREAM ROLLING ROAD      5 - 400 m DOWNSTREAM ROLLING RD      6 - SILVER RD 7 - 200 m DOWNSTREAM      8 - HWY T      9 - THUNDER ROAD			

#### II. Subsegmentation (fill this section out only in cases where subsegmentation is being proposed)

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Upstream Coordinates:		Downstream Coordinates:	
UTM X	Y	UTM X	Y
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± _____ Feet or ± _____ Meters		
PDOP	± _____ Feet or ± _____ Meters		

#### III. Discharger Facility Information (list all permitted dischargers on the stream)

Discharger Facility Name(s):	<i>Auburn Hills WWTF, Milan WWTP</i>		
Discharger Permit Number(s):	<i>MO 0119318, MO 0048151</i>		

#### IV. UAA Surveyor (please print legibly)

Name of Surveyor <i>RENEE MARTIN</i>	Telephone Number: <i>(573) 443-4100</i>
Organization/Employer: <i>MEC Water Resources</i>	
Position: <i>ENV SPECIALIST</i>	

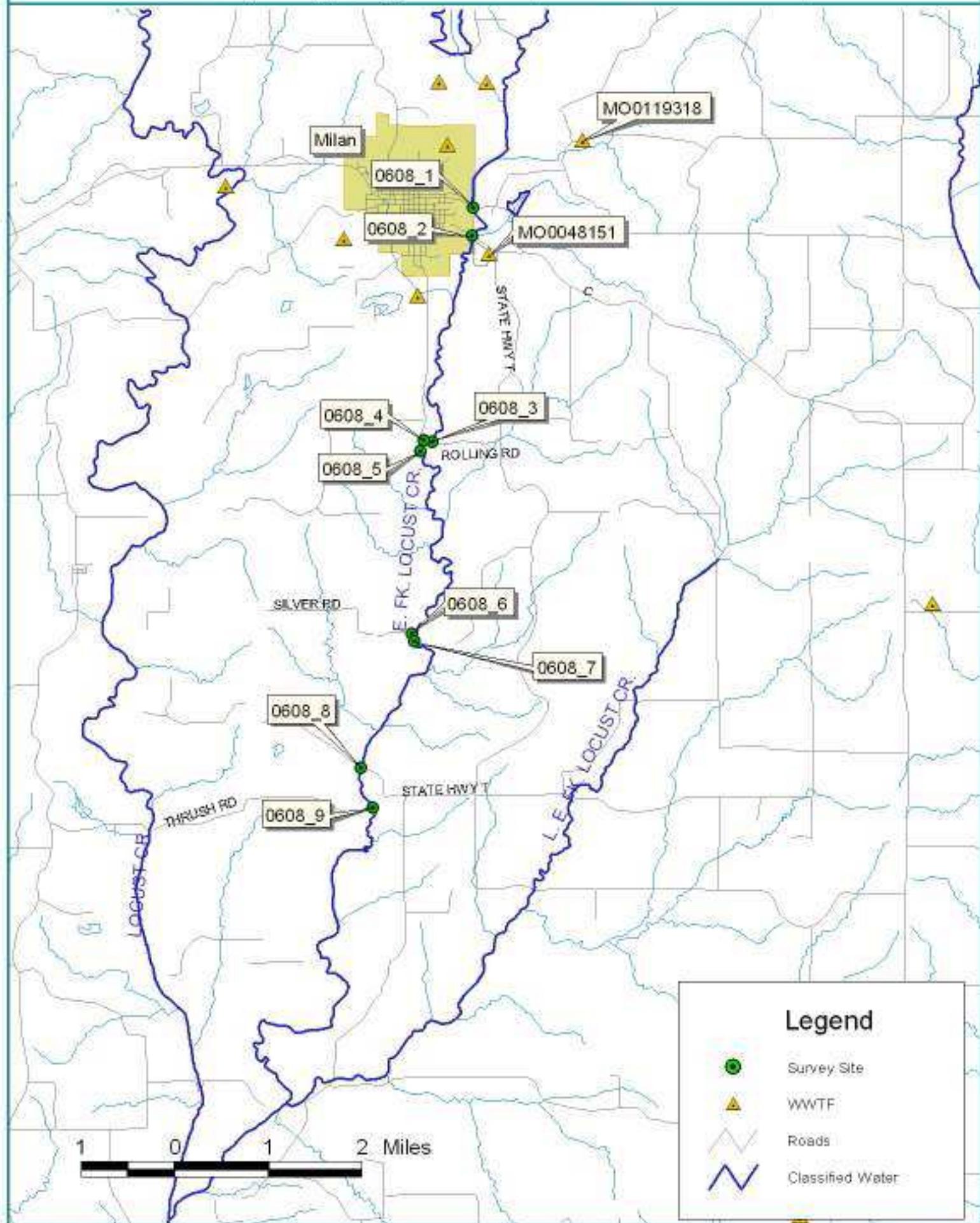
Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Signed: *Renee Mart* Date: *5/22/07*

*Huc 5-24-07*

*AKL 5/25/07*

**E. Fk. Locust Cr. (0608), Length = 16 mi., Permit # MO0048151, MO0119318**



WBID# 0608  
Site# 1**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B - Site Characterization**  
(must be completed for each site)

Date & Time: <u>5/23/07</u> <u>07:35</u>	Site Location Description (e.g., road crossing): <u>EAST THIRD STREET BRIDGE CROSSING</u>
Personnel (Data Collectors): <u>R. MARTIN / J. TOTH</u>	Facility Name: <u>AUBURN HILLS WWT; MILAN WWT</u>
Current Weather Conditions: <u>Partly Cloudy</u>	Permit Number: <u>MO 0119318; MO 0648151</u>
Weather Conditions for Past 10 days: <u>UNKNOWN</u>	
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input checked="" type="checkbox"/>	

**Site Locations:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>0490401</u>		Y: <u>4450041</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	<input type="checkbox"/>
Dynamic Mode (Kinematic)	<input type="checkbox"/>	Aerial Photograph or DOQQ	<input checked="" type="checkbox"/>
Precise Positioning Service	<input type="checkbox"/>	Satellite Imagery	<input checked="" type="checkbox"/>
Signal Averaging	<input checked="" type="checkbox"/>	Interpolation Other	<input type="checkbox"/>
Real Time Differential Processing	<input type="checkbox"/>		
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± <u>—</u> Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>16</u> Feet or ± <u>—</u> Meters		
PDOP	± <u>—</u>		

**Photos:**

Photo ID# (WBID Site# #)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# #)	Photo Purpose and Direction (upstream, downstream, other)
0608-1-201	UPSTREAM SITE #1, TRANSECT #1	0608_Pipe-209	DOWNSTREAM, SITE #1 TRANSECT #1
0608-1-208	DOWNSTREAM SITE #1, TRANSECT #1	-PIPE	
0608_cracked_pip-210	DOWNSTREAM, SITE #1 TRANSECT #2 - CRACKED PIPE	0608_Footprints-211	UPSTREAM, SITE #1, TRANSECT #2

**Uses Observed\*:** (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments: <u>Agriculture</u>				

**Data Sheet B - Site Characterization**

(must be completed for each site)

**Indications of Human Use\*: (attach photos)**

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input checked="" type="checkbox"/> Other:	
Comments: <i>Field drain pipe</i>					

**Stream Morphology:****Upstream View's Physical Descriptions:** Is there any water present at this view?  Yes  NoIf so, is there an obvious current?  Yes  No**Select one of the following channel features:**

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

**Downstream View's Physical Descriptions:** Is there any water present at this view?  Yes  NoIf so, is there an obvious current?  Yes  No**Select one of the following channel features:**

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

**Substrate\*:** (These values should add up to 100%.)

— % Cobble	~ % Gravel	100 % Sand	— % Silt	— % Mud/Clay	~ % Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

<i>None</i>
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**Water Characteristics\*:** (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

**Comments:** Please attach any additional comments to this form.

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

**Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.**Surveyor's Signature: John Mart Date of Survey: 5/23/07Organization: AE Solutions Position: Env. Specialist

# MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>0608</u>	Site #: <u>0608-1</u> (WBID_Site#)	Dissolved Oxygen
		Date: <u>5/23/07</u> Time: <u>0735</u>
Estimated Channel Incision: <u>1.0</u> (m) (height between low bank width and water)		Dissolved Oxygen: <u>7.09</u> (mg/L)
GPS Location (taken at transect 1): UTM X: <u>0490401</u> UTM Y: <u>4450041</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 16</u> (feet)		Dissolved Oxygen: <u>76.2</u> (% sat)
Average Stream Width: <u>9.0</u> (meters) Length of Survey Segment: <u>180</u> (meters) (20x average stream width)		Specific Cond: <u>561.0</u> ( $\mu$ S/cm)
Field Staff: <u>R. MARTIN &amp; J. FORT</u>		Water Temperature: <u>18.3</u> ( $^{\circ}$ C)

## Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)																					
1	0.1	0.1	0.0	0.2	0.3	0.1	0.0	0.0	0.1	0.2	0.1	0.1	0.2	0.1	0.3	0.1	0.0	0.2	0.4	0.1	0.8	0.1	
2	1.0	0.5	0.9	0.5	1.1	0.1	1.0	0.6	1.1	2.0	0.1	0.6	0.4	0.7	0.2	0.75	0.3	0.6	0.3	1.2	0.1	0.9	0.1
3	1.9	0.4	1.8	0.5	1.5	2.0	2.0	0.6	2.2	0.0	1.1	0.5	1.2	0.2	1.2	0.5	1.2	0.2	2.0	0.1	1.6	0.2	
4	2.8	0.4	2.7	0.5	1.9	0.1	3.0	0.4	3.3	0.0	1.6	0.4	1.7	0.2	1.65	0.6	1.8	0.2	2.8	0.1	2.3	0.2	
5	3.7	0.4	3.6	0.5	2.3	0.1	4.0	0.4	4.4	2.0	1.1	0.3	2.2	0.1	2.1	0.5	2.4	0.2	3.6	0.1	3.0	0.2	
6	4.6	0.4	4.5	0.5	2.7	0.1	5.0	0.6	5.5	0.2	2.6	0.2	2.7	2.0	1.1	2.55	0.4	3.0	0.2	4.4	0.1	3.7	0.2
7	5.5	0.3	5.4	0.6	3.1	0.1	6.0	0.7	6.6	0.1	3.1	0.2	3.2	0.1	3.0	0.2	3.6	0.1	5.2	0.1	4.4	0.2	
8	6.4	0.2	6.3	0.4	3.5	0.2	7.0	>1.0	7.7	2.0	1.1	3.6	0.2	3.7	0.2	3.45	0.2	4.2	0.1	6.0	0.1	5.1	0.1
9	7.3	0.2	7.2	0.6	3.9	0.2	8.0	>1.0	8.8	2.0	1.1	4.1	0.1	4.2	0.2	3.9	0.1	4.8	0.1	6.8	0.1	5.8	0.1
10	8.2	0.2	8.1	0.3	4.3	0.2	9.0	0.7	9.9	0.1	4.6	0.1	4.7	0.3	4.35	0.1	5.4	0.1	7.4	0.2	6.5	0.1	
11	9.1	0.1	9.0	0.1	4.7	0.1	10.0	0.2	11.1	0.1	5.1	0.1	5.2	0.1	4.8	0.1	6.0	0.1	8.4	0.1	7.2	0.0	
12	9.2	0.0	9.1	0.0	4.9	0.0	10.0	0.0	11.2	0.0	5.7	0.0	5.7	0.0	5.0	0.0	6.2	0.0	8.7	0.0	7.4	0.0	
Feature Type (rifflerun, or pool)	PoOL	PoOL	RIPPLE	PoOL	PoOL	RUN	RUN	RUN	RUN	PoOL	PoOL	RUN	RUN	RUN	RUN	PoOL	RUN	RUN	RUN	RUN	RUN		

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects in order of up to downstream.

Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1

Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: R. Martin

Date: 5/23/07

BNC 5-24-07

AM 5/25/07

WBID# 0608  
Site# 2**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B - Site Characterization**

(must be completed for each site)

Date & Time: <u>5/23/07 0840</u>	Site Location Description (e.g., road crossing): <u>HWY C BRIDGE CROSSING</u>
Personnel (Data Collectors): <u>R. MARTIN &amp; T. FOTH</u>	Facility Name: <u>AUBURN HILLS WWTF, MILAN TOWNSHIP</u>
Current Weather Conditions: <u>PARTLY CLOUDY</u>	Permit Number: <u>MO 0119318; MO 048151</u>
Weather Conditions for Past 10 days: <u>UNKNOWN</u>	
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input checked="" type="checkbox"/>	

**Site Locations:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)	
Site GPS Coordinates: UTM X: <u>0490392</u> Y: <u>4449554</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)	
Global Positioning System (GPS)	Interpolation
Static Mode	<input checked="" type="checkbox"/>
Dynamic Mode (Kinematic)	<input type="checkbox"/>
Precise Positioning Service	<input checked="" type="checkbox"/>
Signal Averaging	<input checked="" type="checkbox"/>
Real Time Differential Processing	<input type="checkbox"/>
HORIZONTAL ACCURACY ESTIMATE	
GPS Data Quality	Interpolation Data Quality
FOM	<input type="checkbox"/> Meters
EPE	<input type="checkbox"/> Feet or <input type="checkbox"/> Meters
PDOP	<input type="checkbox"/>
Source Map Scale: 1:24,000 1:100,000 Other _____	
<input type="checkbox"/> Feet or <input type="checkbox"/> Meters	

**Photos:**

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
0608-2-212	DOWNSTREAM, SITE #2 TRANSECT #1 - IRRIGATION PIPES		
0608-2-213	UPSTREAM, SITE #2 TRANSECT #1		

**Uses Observed\*:** (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments: <u>AGRICULTURE</u>				

### Data Sheet B - Site Characterization

(must be completed for each site)

**Indications of Human Use\*: (attach photos)**

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites		<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input checked="" type="checkbox"/> Other:
Comments: <i>IRRIGATION PIPES</i>					

**Stream Morphology:**

**Upstream View's Physical Descriptions:** Is there any water present at this view?  Yes  No

If so, is there an obvious current?  Yes  No

**Select one of the following channel features:**

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

**Downstream View's Physical Descriptions:** Is there any water present at this view?  Yes  No

If so, is there an obvious current?  Yes  No

**Select one of the following channel features:**

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

**Substrate\*:** (These values should add up to 100%.)

<input type="checkbox"/> % Cobble	<input type="checkbox"/> % Gravel	<input checked="" type="checkbox"/> 100 % Sand	<input type="checkbox"/> % Silt	<input type="checkbox"/> % Mud/Clay	<input type="checkbox"/> % Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

<i>None Present</i>
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**Water Characteristics\*:** (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

**Comments:** Please attach any additional comments to this form.

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: Dane Martin Date of Survey: 5/23/07

Organization: AE SOLUTIONS Position: ENV. SPECIALIST

# MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>0608</u> Site #: <u>0608-2</u> (WBID_Site#)	<b>Dissolved Oxygen</b> Date: <u>5/23/07</u> Time: <u>0840</u>  Dissolved Oxygen: <u>6.62</u> (mg/L)  Dissolved Oxygen: <u>70.0</u> (% sat)  Specific Cond: <u>562.0</u> ( $\mu$ S/cm)  Water Temperature: <u>18.6</u> ( $^{\circ}$ C)
Estimated Channel Incision: <u>160</u> (m) (height between low bank width and water) GPS Location (taken at transect 1): UTM X: <u>0490392</u> UTM Y: <u>4449554</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 23</u> (feet)	
Average Stream Width: <u>8</u> (meters) Length of Survey Segment: <u>160</u> (meters) (20x average stream width)	
Field Staff: <u>R. MARTIN &amp; J. FOTH</u>	

## Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
1	0.4	0.1	0.8	0.1	0.1	0.1	0.4	0.1	1.4	0.1	0.1	0.1	1.4	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.9	0.1
2	0.9	0.2	1.35	0.1	1.2	0.1	1.25	0.2	2.4	0.1	1.3	0.1	2.05	0.2	0.75	0.1	0.75	0.2	0.5	0.4	1.25	0.1
3	1.7	0.3	1.9	0.2	2.3	0.1	2.1	0.2	3.4	0.1	2.5	0.1	2.7	0.2	1.3	0.2	1.4	0.2	0.8	0.5	1.6	0.1
4	2.5	0.2	2.45	0.2	3.4	0.2	2.95	0.2	4.4	0.2	3.7	0.1	3.35	0.3	1.85	0.1	2.05	0.1	1.1	0.5	1.95	0.1
5	3.3	0.2	3.0	0.2	4.5	0.2	3.8	0.4	5.4	0.2	4.9	0.1	4.0	0.3	2.4	0.2	2.7	0.2	1.4	0.5	2.3	0.2
6	4.1	0.4	3.55	0.2	5.4	0.2	4.65	0.4	6.4	0.1	6.1	0.0	4.65	0.3	2.95	0.2	3.35	0.3	1.7	0.4	2.65	0.2
7	4.9	0.4	4.1	0.2	6.2	0.2	5.5	0.6	7.4	0.1	7.3	0.2	5.3	0.3	3.5	0.2	4.0	0.2	2.0	0.4	3.0	0.2
8	5.7	0.5	4.65	0.3	7.8	0.1	6.35	0.6	8.4	0.3	8.5	0.4	5.95	0.3	4.05	0.3	4.65	0.2	2.3	0.3	3.35	0.2
9	6.5	0.5	5.2	0.3	8.9	0.1	7.2	0.7	9.4	0.2	9.7	0.4	6.6	0.2	4.6	0.2	5.3	0.1	2.6	0.2	3.7	0.2
10	7.3	0.4	5.75	0.2	10.0	0.1	8.05	0.6	10.4	0.2	10.9	0.4	7.25	0.1	5.15	0.3	5.95	0.1	2.9	0.1	4.05	0.2
11	8.1	0.2	6.3	0.1	11.1	0.1	8.9	0.1	11.4	0.1	12.1	0.1	7.9	0.1	5.7	0.2	6.6	0.1	3.2	0.1	4.4	0.1
12	8.1	0.2	7.8	0.0	11.4	0.0	9.1	0.0	11.6	0.0	12.2	0.0	8.1	0.0	5.7	0.2	7.6	0.0	5.5	0.0	4.8	0.0
Feature Type (riffle, run, or pool)	pool	run	run	riffle	pool	run	riffle	run	run/pool	run	run	run	run	run	run	run	run	pool/run	run	run	run/run	run/run

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects in order of up to downstream.

Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1

Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed:

*Renee Martin*

Date: 5/23/07

*AMC 5-24-07*

*AKS 5/25/07*

WBID# 0608  
Site# 3

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>5/23/07 0945</u>	Site Location Description (e.g., road crossing): <u>ROLLING ROAD BRIDGE CROSSINGS</u>
Personnel (Data Collectors): <u>R. MARTIN ; J. FOTH</u>	Facility Name: <u>AUBURN HILLS MNTF; MILAN WTP</u>
Current Weather Conditions: <u>PARTLY CLOUDY</u>	Permit Number: <u>MO 019318; MO 0048151</u>
Weather Conditions for Past 10 days: <u>Unknown</u>	
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input checked="" type="checkbox"/>	

#### Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>0489725</u> Y: <u>4446015</u>			
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)			
Static Mode	<input checked="" type="checkbox"/>	Interpolation	Topographic Map or DRG
Dynamic Mode (Kinematic)	<input checked="" type="checkbox"/>	Aerial Photograph or DOQQ	
Precise Positioning Service	<input checked="" type="checkbox"/>	Satellite Imagery	
Signal Averaging	<input checked="" type="checkbox"/>	Interpolation Other	<input checked="" type="checkbox"/>
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± <u>—</u> Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>16</u> Feet or ± <u>—</u> Meters	± <u>—</u> Feet or ± <u>—</u> Meters	
PDOP			

#### Photos:

Photo ID# (WBID_Site#_##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID_Site#_##)	Photo Purpose and Direction (upstream, downstream, other)
0608-3-214	UPSTREAM SITE #3 TRANSECT #1		
0608-3-215	DOWNSTREAM SITE #3 TRANSECT #1		

#### Uses Observed\*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

#### Surrounding Conditions\*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input checked="" type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

**Data Sheet B - Site Characterization**

(must be completed for each site)

**Indications of Human Use\*: (attach photos)**

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: <i>None</i>					

**Stream Morphology:****Upstream View's Physical Descriptions:** Is there any water present at this view?  Yes  NoIf so, is there an obvious current?  Yes  No**Select one of the following channel features:**

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

**Downstream View's Physical Descriptions:** Is there any water present at this view?  Yes  NoIf so, is there an obvious current?  Yes  No**Select one of the following channel features:**

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

**Substrate\*:** (These values should add up to 100%.)

<input type="checkbox"/> % Cobble	<input type="checkbox"/> % Gravel	<input checked="" type="checkbox"/> 100	<input type="checkbox"/> % Sand	<input type="checkbox"/> % Silt	<input type="checkbox"/> % Mud/Clay	<input type="checkbox"/> % Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

<i>None</i>
-------------

**Water Characteristics\*:** (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

**Comments:** Please attach any additional comments to this form.

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

**Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.**Surveyor's Signature: Steve Mart Date of Survey: 5/23/07Organization: AE SOLUTIONS Position: ENV. SPECIALIST

# MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>0608</u>	Site #: <u>0608-3</u> (WBID_Site#)	Dissolved Oxygen
		Date: <u>5/23/07</u> Time: <u>0945</u>
Estimated Channel Incision: <u>&lt;1.0</u> (m) (height between low bank width and water)		Dissolved Oxygen: <u>8.21</u> (mg/L)
GPS Location (taken at transect 1): UTM X: <u>0489723</u> UTM Y: <u>4446017</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 16</u> (feet)		Dissolved Oxygen: <u>88.9</u> (% sat)
Average Stream Width: <u>7.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (20x average stream width)		Specific Cond: <u>561.0</u> ( $\mu\text{S}/\text{cm}$ )
Field Staff: <u>Ronnie MARTIN ; JUSTYN FOTH</u>		Water Temperature: <u>19.4</u> ( $^{\circ}\text{C}$ )

## Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
1	0.0	0.1	0.1	0.2	0.1	0.0	0.2	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.4	0.0	0.2	0.2	0.1	0.1	0.1
2	0.4	0.3	0.7	0.2	0.8	0.4	0.5	>1.0	0.8	0.6	0.7	>1.0	0.7	0.4	0.7	1.0	0.7	0.7	0.7	0.2	0.4	0.4
3	0.8	0.5	1.3	0.1	1.4	0.4	1.0	>1.0	1.5	1.0	1.4	>1.0	1.4	1.0	1.4	>1.0	1.4	1.0	1.8	0.8	1.5	0.7
4	1.2	0.3	1.9	0.7	2.0	0.4	1.5	0.9	2.2	>1.0	2.1	>1.0	2.1	>1.0	2.1	>1.0	2.1	>1.0	2.1	1.0	2.2	1.0
5	1.6	0.2	2.5	0.1	2.6	0.4	2.0	0.8	2.9	>1.0	2.8	>1.0	2.8	>1.0	2.8	>1.0	2.8	>1.0	3.4	>1.0	2.9	>1.0
6	2.0	0.2	3.1	0.1	3.2	0.4	2.5	0.6	3.6	1.0	3.5	>1.0	3.5	>1.0	3.5	>1.0	3.5	>1.0	4.2	>1.0	3.4	>1.0
7	2.4	0.2	3.7	0.1	3.8	0.3	3.0	0.5	4.3	0.8	4.2	>1.0	4.2	>1.0	4.2	>1.0	4.2	>1.0	5.0	>1.0	4.3	>1.0
8	2.8	0.2	4.3	0.1	4.4	0.3	3.5	0.4	5.0	0.5	4.9	>1.0	4.9	>1.0	4.9	>1.0	4.9	>1.0	5.8	>1.0	5.0	>1.0
9	3.2	0.2	4.9	0.4	5.0	0.2	4.0	0.3	5.7	0.3	5.6	>1.0	5.6	0.8	5.4	1.0	5.4	>1.0	6.6	>1.0	5.7	>1.0
10	3.6	0.1	5.5	0.3	5.6	0.2	4.5	0.2	6.4	0.2	6.3	>1.0	6.3	0.8	6.3	0.7	6.3	>1.0	7.4	>1.0	6.4	>1.0
11	4.0	0.1	6.1	0.1	6.2	0.1	5.0	0.1	7.1	0.1	7.0	>1.0	7.0	0.1	7.0	0.4	7.0	0.6	8.2	>1.0	7.1	0.7
12	4.2	0.0	6.3	0.0	8.0	0.0	5.8	0.0	7.3	0.0	7.0	0.0	7.2	0.0	7.5	0.0	7.1	0.0	8.5	0.0	7.3	0.0
Feature Type (riffle, run, or pool)	Run	Run	Pool	Pool	Pool																	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects in order of up to downstream.

Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1

Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: June Mat Date: 5/23/07  
 Runc 5-24-07  
June Mat 5/23/07

WBID# 0608  
Site# 4**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B - Site Characterization**  
(must be completed for each site)

Date & Time: <u>5/23/07 1025</u>	Site Location Description (e.g., road crossing): <u>200 m DOWNSTREAM ROLLING ROAD BRIDGE CROSSING</u>
Personnel (Data Collectors): <u>R.Martin J. Roth</u>	Facility Name: <u>AUBURN HILLS WWT, MILAN WWT&amp;P</u>
Current Weather Conditions: <u>P. Cloudy</u>	Permit Number: <u>MO D119318; MO 004815</u>
Weather Conditions for Past 10 days: <u>Unknown</u>	
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input checked="" type="checkbox"/>	

**Site Locations:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)	
Site GPS Coordinates: UTM X: <u>489677</u>	Y: <u>4446039</u>
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)	
Global Positioning System (GPS)	Interpolation
Static Mode	<input checked="" type="checkbox"/>
Dynamic Mode (Kinematic)	<input type="checkbox"/>
Precise Positioning Service	<input checked="" type="checkbox"/>
Signal Averaging	<input checked="" type="checkbox"/>
Real Time Differential Processing	<input type="checkbox"/>
HORIZONTAL ACCURACY ESTIMATE	
GPS Data Quality	
FOM	± _____ Meters
EPE	± <u>17</u> Feet or ± _____ Meters
PDOP	_____
Interpolation Data Quality	
Source Map Scale: 1:24,000 1:100,000 Other _____	
± _____ Feet or ± _____ Meters	

**Photos:**

Photo ID# (WBID_Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID_Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
0608-4-216	UPSTREAM, SITE #4; TRANSECT #1		
0608-4-217	DOWNSTREAM, SITE #4; TRANSECT #1		

**Uses Observed\*:** (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

**Data Sheet B - Site Characterization**

(must be completed for each site)

**Indications of Human Use\*: (attach photos)**

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: <i>None</i>					

**Stream Morphology:****Upstream View's Physical Descriptions:** Is there any water present at this view?  Yes  NoIf so, is there an obvious current?  Yes  No**Select one of the following channel features:**

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

**Downstream View's Physical Descriptions:** Is there any water present at this view?  Yes  NoIf so, is there an obvious current?  Yes  No**Select one of the following channel features:**

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

**Substrate\*:** (These values should add up to 100%). % Cobble  % Gravel  100 % Sand  % Silt  % Mud/Clay  % Bedrock**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)*None***Water Characteristics\*:** (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

**Comments:** Please attach any additional comments to this form.

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

**Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.**Surveyor's Signature: *John Mat* Date of Survey: *5/23/07*Organization: *AE SOLUTIONS* Position: *ENV. SPECIALIST*

# MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>0608</u> Site #: <u>0608-4</u> (WBID_Site#)	Dissolved Oxygen Date: <u>5/23/07</u> Time: <u>1025</u> Dissolved Oxygen: <u>7.45</u> (mg/L) Dissolved Oxygen: <u>81.1</u> (% sat) Specific Cond: <u>563</u> ( $\mu\text{S}/\text{cm}$ ) Water Temperature: <u>19.5</u> ( $^{\circ}\text{C}$ )
Estimated Channel Incision: <u>1.0</u> (m) (height between low bank width and water) GPS Location (taken at transect 1): UTM X: <u>489577</u> UTM Y: <u>4446039</u> Horizontal Accuracy Estimate (GPS Data Quality): +/- <u>17</u> (feet)	
Average Stream Width: <u>7.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (20x average stream width) Field Staff: <u>R. MARTIN &amp; J. FOTH</u>	

Transect Cross-Section																							
Measurement	01		02		03		04		05		06		07		08		09		10				
	Distance (m)	Depth (m)																					
1	-0.5	0.1	0.2	0.1	0.5	0.1	0.0	0.4	0.2	0.1	0.10	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.4	0.0	0.1	0.9	0.1
2	0.75	0.6	0.9	0.3	1.2	0.2	0.85	1.0	1.2	0.4	0.5	0.1	0.75	0.12	605	0.14	0.85	0.5	0.65	0.5	1.4	0.1	
3	1.4	0.7	1.6	0.5	1.9	0.3	1.7	>1.0	2.2	0.5	1.0	0.2	1.4	0.1	2.0	0.7	1.7	0.4	1.3	0.7	1.9	0.2	
4	2.05	0.8	2.3	0.6	2.6	0.3	2.55	>1.0	3.2	0.7	1.5	0.2	2.05	0.12	2.95	0.6	2.55	0.4	1.95	0.7	2.4	0.2	
5	2.7	0.8	3.0	0.8	3.3	0.3	3.4	>1.0	4.2	0.7	2.0	0.2	2.7	0.2	3.9	0.4	3.4	0.3	2.6	0.4	2.9	0.2	
6	3.35	0.8	3.7	0.9	4.0	0.4	4.25	>1.0	5.2	0.7	2.5	0.1	3.35	0.2	4.85	0.2	4.25	0.2	3.25	0.4	3.4	0.3	
7	4.0	0.7	4.4	0.9	4.7	0.4	5.1	>1.0	6.2	0.4	3.0	0.1	4.0	0.2	5.8	0.1	5.1	0.2	3.9	0.3	3.9	0.3	
8	4.45	0.7	5.1	0.9	5.4	0.5	5.95	>1.0	7.2	0.5	3.5	0.2	4.45	0.2	6.75	0.2	5.95	0.1	4.55	0.1	4.4	0.3	
9	5.3	0.7	5.8	0.8	6.1	0.5	6.8	>1.0	8.2	0.6	4.0	0.1	5.3	0.2	7.70	0.3	6.8	0.2	5.2	<0.1	4.9	0.3	
10	5.95	0.5	6.5	0.5	6.8	0.3	7.65	0.8	9.2	0.6	4.5	0.1	5.95	0.1	8.65	0.3	7.65	0.2	5.85	<0.1	5.4	0.3	
11	6.6	0.1	7.2	0.1	7.5	0.1	8.5	0.1	10.2	0.1	5.0	0.1	6.6	0.1	9.6	0.1	8.5	0.1	6.5	0.1	5.9	0.1	
12	6.9	0.0	7.3	0.0	8.0	0.0	8.6	0.0	10.3	0.0	6.0	0.0	7.0	0.0	10.0	0.0	8.8	0.0	6.7	0.0	6.4	0.0	
Feature Type (riffler, run, or pool)		PoOl	PoOl	PoOl	PoOl	PoOl	PoOl	RiFFle	RiFFle	RiFFle	PoOl	PoOl	PoOl	PoOl	PoOl	PoOl	PoOl	PoOl	Run				

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects in order of up to downstream.

Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1

Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: R. Martin

Date: 5/23/07

AAC 5-24-07

JK 5/25/07

WBID# 0608  
Site# 5**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B - Site Characterization**

(must be completed for each site)

Date & Time: <u>5/23/07 1105</u>	Site Location Description (e.g., road crossing): <u>100 m DOWNSTREAM ROLLING ROAD BRIDGE CROSSING</u>
Personnel (Data Collectors): <u>R. MARTIN &amp; J. FOTH</u>	Facility Name: <u>AUBURN HILLS WWTF MILAN WWTP</u>
Current Weather Conditions: <u>P. CLOUDY</u>	Permit Number: <u>MO 0119318; MO 0048151</u>
Weather Conditions for Past 10 days: <u>UNKNOWN</u>	
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input checked="" type="checkbox"/>	

**Site Locations:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)	
Site GPS Coordinates: UTM X: <u>489521</u>	Y: <u>4445846</u>
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)	
Global Positioning System (GPS)	Interpolation
Static Mode	<input checked="" type="checkbox"/>
Dynamic Mode (Kinematic)	<input type="checkbox"/>
Precise Positioning Service	<input type="checkbox"/>
Signal Averaging	<input type="checkbox"/>
Real Time Differential Processing	<input type="checkbox"/>
HORIZONTAL ACCURACY ESTIMATE	
GPS Data Quality	Interpolation Data Quality
FOM	$\pm$ _____ Meters
EPE	$\pm$ <u>19</u> Feet or $\pm$ _____ Meters
PDOP	
Source Map Scale: 1:24,000 1:100,000 Other _____	
$\pm$ _____ Feet or $\pm$ _____ Meters	

**Photos:**

Photo ID# (WBID_Site#_##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID_Site#_##)	Photo Purpose and Direction (upstream, downstream, other)
0608-5-218	UPSTREAM, SITE #5, TRANSECT #1		
0608-5-219	DOWNSTREAM, SITE #5, TRANSECT #1		

**Uses Observed\*:** (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments:				

**Data Sheet B - Site Characterization**

(must be completed for each site)

**Indications of Human Use\*: (attach photos)**

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: <i>None</i>					

**Stream Morphology:****Upstream View's Physical Descriptions:** Is there any water present at this view?  Yes  NoIf so, is there an obvious current?  Yes  No**Select one of the following channel features:**

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

**Downstream View's Physical Descriptions:** Is there any water present at this view?  Yes  NoIf so, is there an obvious current?  Yes  No**Select one of the following channel features:**

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

**Substrate\*:** (These values should add up to 100%.)

<input type="checkbox"/> % Cobble	<input type="checkbox"/> % Gravel	<input checked="" type="checkbox"/> 100 % Sand	<input type="checkbox"/> % Silt	<input type="checkbox"/> % Mud/Clay	<input type="checkbox"/> % Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

<i>None</i>
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**Water Characteristics\*:** (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

**Comments:** Please attach any additional comments to this form.

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

**Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.**Surveyor's Signature: Mall Mart Date of Survey: 5/23/07Organization: ASOLUTIONS Position: ENV. SPECIALIST

# MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>0608</u>	Site #: <u>0608-5</u> (WBID_Site#)	Dissolved Oxygen
		Date: <u>6/23/07</u> Time: <u>1105</u>
Estimated Channel Incision: <u>21.0</u> (m) (height between low bank width and water)		Dissolved Oxygen: <u>6.38</u> (mg/L)
GPS Location (taken at transect 1): UTM X: <u>489521</u> UTM Y: <u>4445846</u> m <u>19</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 4445844</u> (feet)		Dissolved Oxygen: <u>68.8</u> (% sat)
Average Stream Width: <u>9.0</u> (meters)	Length of Survey Segment: <u>180</u> (meters) (20x average stream width)	Specific Cond: <u>571</u> ( $\mu\text{S}/\text{cm}$ )
Field Staff: <u>R. MARTIN &amp; J. FOTH</u>		Water Temperature: <u>19.7</u> ( $^{\circ}\text{C}$ )

Transect Cross-Section																				
01		02		03		04		05		06		07		08		09		10		
Measurement	Distance (m)	Depth (m)																		
1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.2	0.0	0.1	0.0	0.2	0.1	0.1
2	0.95	0.3	0.8	0.4	1.0	0.4	1.3	0.2	1.0	0.4	1.0	0.5	0.85	0.6	1.3	0.7	0.85	0.6	0.7	0.4
3	1.8	0.5	1.5	0.5	2.0	0.4	2.5	0.2	1.8	0.5	2.0	0.5	1.7	0.4	2.6	0.7	1.7	0.8	1.3	0.8
4	2.65	0.6	2.2	0.6	3.0	0.4	3.7	0.2	2.6	0.5	3.0	0.4	2.55	0.2	3.9	0.9	2.55	0.9	1.9	0.9
5	3.5	0.6	2.9	0.7	4.0	0.5	4.9	0.2	3.4	0.4	4.0	0.3	3.4	0.3	5.2	0.8	3.4	1.0	2.5	1.0
6	4.35	0.6	3.6	0.8	5.0	0.6	6.1	0.2	4.2	0.4	5.0	0.3	4.25	0.4	6.5	0.7	4.25	1.0	3.1	0.8
7	5.2	0.7	4.3	0.9	6.0	0.6	7.3	0.3	5.0	0.4	6.0	0.2	5.1	0.3	7.8	0.5	5.1	>1.0	3.7	0.5
8	6.05	0.7	5.0	>1.0	7.0	0.5	8.5	0.3	5.8	0.3	7.0	0.2	5.95	0.3	9.1	0.6	5.95	0.7	4.3	0.4
9	6.9	0.7	5.7	0.6	8.0	0.3	9.7	0.1	6.6	0.3	8.0	0.2	6.8	0.3	10.4	0.3	6.8	0.3	4.9	0.4
10	7.75	0.7	6.4	0.8	9.0	0.2	10.9	0.1	7.4	0.2	9.0	0.4	7.65	0.2	11.7	0.1	7.65	0.3	5.5	0.4
11	8.6	0.3	7.1	0.1	10.0	0.1	12.1	0.1	8.2	0.2	10.0	0.1	8.5	0.1	13.0	0.1	8.5	0.1	6.1	0.1
12	9.5	0.3	7.3	0.0	10.2	0.0	12.9	0.0	8.6	0.2	10.5	0.0	9.8	0.0	13.1	0.0	8.6	0.0	6.2	0.0
Feature Type (riffle, run, or pool)	Pool	Pool	Pool	Run	Pool	Pool	Run	Pool	Pool	Pool	Pool	Run	Pool	Run	Pool	Run	Pool	Run	Pool	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects in order of up to downstream.

Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1

Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed:

Date: 6/23/07

RNC 5-24-07

WBID# 0608  
Site# 6**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B - Site Characterization**

(must be completed for each site)

Date & Time: <u>5/23/07 1230</u>	Site Location Description (e.g., road crossing): <u>SILVER ROAD</u>
Personnel (Data Collectors): <u>D. MARTIN &amp; J. FOTH</u>	Facility Name: <u>AUBURN HILLS WWT, MILAN WWT/P</u>
Current Weather Conditions: <u>P. CLOUDY</u>	Permit Number: <u>MO 01A931B; MO 00481S1</u>
Weather Conditions for Past 10 days: <u>UNKNOWN</u>	
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input checked="" type="checkbox"/>	

**Site Locations:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>0489371</u>		Y: <u>4442728</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	Topographic Map or DRG	<input type="checkbox"/>
Dynamic Mode (Kinematic)	<input checked="" type="checkbox"/>	Aerial Photograph or DOQQ	<input checked="" type="checkbox"/>
Precise Positioning Service	<input checked="" type="checkbox"/>	Satellite Imagery	<input checked="" type="checkbox"/>
Signal Averaging	<input checked="" type="checkbox"/>	Interpolation Other	<input type="checkbox"/>
Real Time Differential Processing	<input checked="" type="checkbox"/>		
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± <u>      </u> Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>21</u> Feet or ± <u>      </u> Meters	± <u>      </u> Feet or ± <u>      </u> Meters	
PDOP	<u>      </u>		

**Photos:**

Photo ID# (WBID_Site#_##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID_Site#_##)	Photo Purpose and Direction (upstream, downstream, other)
<u>0608-6-220</u>	<u>UPSTREAM, SITE #6 TRANSECT #1</u>		
<u>0608-6-221</u>	<u>DOWNSTREAM, SITE #6 TRANSECT #1</u>		

**Uses Observed\*: (Uses actually observed at time of survey.)**

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)**Surrounding Conditions\*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)**

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

Agriculture

**Data Sheet B - Site Characterization**

(must be completed for each site)

**Indications of Human Use\*: (attach photos)**

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: <i>None</i>					

**Stream Morphology:****Upstream View's Physical Descriptions:** Is there any water present at this view?  Yes  NoIf so, is there an obvious current?  Yes  No**Select one of the following channel features:**

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

**Downstream View's Physical Descriptions:** Is there any water present at this view?  Yes  NoIf so, is there an obvious current?  Yes  No**Select one of the following channel features:**

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

**Substrate\*:** (These values should add up to 100%.)

<input type="checkbox"/> % Cobble	<input type="checkbox"/> % Gravel	<input checked="" type="checkbox"/> 100 % Sand	<input type="checkbox"/> % Silt	<input type="checkbox"/> % Mud/Clay	<input type="checkbox"/> % Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

<i>None</i>
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**Water Characteristics\*:** (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

**Comments:** Please attach any additional comments to this form.

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

**Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.**Surveyor's Signature: Chris Mat Date of Survey: 5/23/07Organization: AE Solutions Position: ENV. Specialist

# MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>0608</u>	Site #: <u>0608-6</u> (WBID_Site#)	Dissolved Oxygen
		Date: <u>5/23/07</u> Time: <u>12:30 pm</u>
Estimated Channel Incision: <u>5.0</u> (m) (height between low bank width and water)		Dissolved Oxygen: <u>5.99</u> (mg/L)
GPS Location (taken at transect 1): UTM X: <u>0489371</u> UTM Y: <u>4442728</u>		Dissolved Oxygen: <u>67.3</u> (% sat)
Horizontal Accuracy Estimate (GPS Data Quality): +/- <u>21</u> (feet)		Specific Cond: <u>565</u> ( $\mu\text{S}/\text{cm}$ )
Average Stream Width: <u>8.5</u> (meters) (20x average stream width)		Water Temperature: <u>22.3</u> ( $^{\circ}\text{C}$ )
Field Staff: <u>R. MARTIN &amp; J. FOTH</u>		

## Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
1	1.0	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.3	0.1	0.2	0.1	0.2	0.1	0.6	0.1		
2	1.5	0.1	0.65	0.1	0.6	0.2	0.8	0.1	0.9	0.3	0.5	0.3	0.7	0.3	0.6	0.3	0.45	0.6	0.7	0.3	1.1	0.2
3	2.0	0.1	1.1	0.2	1.1	0.2	1.5	0.1	1.7	0.2	0.8	0.6	1.3	0.4	0.9	0.3	0.7	0.6	1.2	0.3	1.6	0.2
4	2.5	0.1	1.55	0.2	1.6	0.2	2.2	0.2	2.5	0.1	1.1	0.6	1.9	0.4	1.2	0.2	0.95	0.5	1.7	0.3	2.1	0.2
5	3.0	0.1	2.0	0.2	2.1	0.1	2.9	0.2	3.3	0.1	1.4	0.7	2.5	0.6	1.5	0.2	1.2	0.5	2.2	0.4	3.6	0.2
6	3.5	0.2	2.45	0.2	2.6	0.1	3.6	0.1	4.1	0.1	1.7	0.7	3.1	0.4	1.8	0.2	1.45	0.4	2.7	0.5	3.1	0.3
7	4.0	0.2	2.9	0.2	3.1	0.1	4.3	0.2	4.9	0.1	2.0	0.3	3.7	0.3	2.1	0.2	1.7	0.3	3.2	0.5	3.6	0.4
8	4.5	0.2	3.35	0.1	3.6	0.1	5.0	0.3	5.7	0.1	2.3	0.4	4.3	0.3	2.4	0.1	1.95	0.2	3.7	0.5	4.1	0.4
9	5.0	0.2	3.8	0.1	4.1	0.1	5.7	0.2	6.5	0.1	2.6	0.4	4.9	0.3	2.7	0.1	2.2	0.2	4.2	0.4	4.4	0.2
10	5.5	0.1	4.25	0.1	4.6	0.1	6.4	0.1	7.3	0.1	2.9	0.5	5.5	0.2	3.0	0.1	2.45	0.1	4.7	0.2	5.1	0.2
11	6.0	0.1	4.7	0.1	5.1	0.1	7.1	0.1	8.1	0.1	3.2	0.1	6.1	0.1	3.3	0.1	2.7	0.1	5.2	0.1	5.5	0.1
12	6.2	0.0	5.3	0.0	5.3	0.0	7.2	0.0	8.4	0.0	3.9	0.0	7.1	0.0	4.7	0.0	3.2	0.0	5.8	0.0	6.6	0.0
Feature Type (riffle, run, or pool)	Run	Run																				

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects in order of up to downstream.

Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1

Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: R. Martin Date: 5/23/07  
 RNC 5-24-07 ABC 5/25/07

WBID# 0608  
Site# 7**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B - Site Characterization**

(must be completed for each site)

Date & Time: <u>5/23/07 1300</u>	Site Location Description (e.g., road crossing): <u>200 m DOWNSTREAM SILVER RD</u>
Personnel (Data Collectors): <u>R. MARTIN &amp; T. FOTH</u>	Facility Name: <u>AUBURN HILLS WWTF, MILAN WWTP</u>
Current Weather Conditions: <u>P. CLOUDY</u>	Permit Number: <u>MO 0119318; MO 0048151</u>
Weather Conditions for Past 10 days: <u>UNKNOWN</u>	
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input checked="" type="checkbox"/>	

**Site Locations:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)	
Site GPS Coordinates: UTM X: <u>0409418</u> Y: <u>4442597</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)	
Global Positioning System (GPS)	Interpolation
Static Mode	<input checked="" type="checkbox"/>
Dynamic Mode (Kinematic)	<input type="checkbox"/>
Precise Positioning Service	<input type="checkbox"/>
Signal Averaging	<input type="checkbox"/>
Real Time Differential Processing	<input type="checkbox"/>
HORIZONTAL ACCURACY ESTIMATE	
GPS Data Quality	Interpolation Data Quality
FOM	<input type="checkbox"/> Meters
EPE	<input type="checkbox"/> Feet or <input type="checkbox"/> Meters
PDOP	<input type="checkbox"/>
Source Map Scale: 1:24,000 1:100,000 Other _____	
<input type="checkbox"/> Feet or <input type="checkbox"/> Meters	

**Photos:**

Photo ID# (WBID_Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID_Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>0608-7-222</u>	<u>UPSTREAM SITE #7; TRANSECT #1</u>		
<u>0608-7-223</u>	<u>DOWN STREAM SITE #7; TRANSECT #1</u>		

**Uses Observed\*:** (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

Agriculture

WBID# 408  
Site# 7

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet B - Site Characterization (must be completed for each site)

#### Indications of Human Use\*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	

Comments:  
*None*

#### Stream Morphology:

**Upstream View's Physical Descriptions:** Is there any water present at this view?  Yes  No

If so, is there an obvious current?  Yes  No

#### Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

**Downstream View's Physical Descriptions:** Is there any water present at this view?  Yes  No

If so, is there an obvious current?  Yes  No

#### Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

#### Substrate\*: (These values should add up to 100%).

% Cobble	<u>10</u>	% Gravel	<u>90</u>	% Sand	% Silt	% Mud/Clay	% Bedrock
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#### Aquatic Vegetation\*: (Note amount of vegetation or algal growth at the assessment site.)

[Large empty box for aquatic vegetation notes]

#### Water Characteristics\*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

#### Comments:

 Please attach any additional comments to this form.

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: John Mat Date of Survey: 5/23/07

Organization: AE SOLUTIONS Position: ENV. SPECIALIST

# MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>0608</u> Site #: <u>0608-F</u> (WBID_Site#)	<b>Dissolved Oxygen</b> Date: <u>5/23/07</u> Time: <u>1300</u>  Dissolved Oxygen: <u>5.99</u> (mg/L)  Dissolved Oxygen: <u>68.1</u> (% sat)  Specific Cond: <u>565</u> ( $\mu\text{S}/\text{cm}$ )  Water Temperature: <u>22.5</u> ( $^{\circ}\text{C}$ )
Estimated Channel Incision: <u>3.0</u> (m) (height between low bank width and water) GPS Location (taken at transect 1): UTM X: <u>0489418</u> UTM Y: <u>4442597</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 27</u> (feet)	
Average Stream Width: <u>8</u> (meters) Length of Survey Segment: <u>160</u> (meters) (20x average stream width)	
Field Staff: <u>R. MARTIN &amp; J. FOTH</u>	

## Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
1	0.3	0.1	0.2	0.1	0.0	0.1	1.0	0.1	0.1	0.1	0.6	0.1	0.1	0.2	0.1	0.4	0.1	0.4	0.1	0.3	0.1	
2	1.0	0.1	1.2	0.2	1.2	0.2	1.25	0.1	0.5	0.2	0.5	0.3	0.8	0.5	1.1	0.12	1.0	0.1	1.15	0.1	0.75	0.2
3	1.1	0.1	2.2	0.4	2.4	0.2	1.5	0.1	0.9	0.3	0.9	0.4	1.5	0.4	2.0	0.2	1.6	0.2	1.9	0.2	1.2	0.3
4	2.4	<0.1	3.2	0.4	3.6	0.2	1.75	0.2	1.3	0.2	1.3	0.5	2.2	0.4	2.9	0.0	2.2	0.3	2.65	0.2	1.65	0.3
5	3.1	<0.1	4.2	0.5	4.8	0.1	2.0	0.2	1.7	0.3	1.7	0.6	2.9	0.3	3.0	0.0	2.8	0.2	3.4	0.2	2.1	0.2
6	3.8	0.1	5.2	0.6	6.0	0.1	2.25	0.2	2.1	0.3	2.1	0.6	3.6	0.3	4.7	>0.1	3.4	0.1	4.15	0.1	2.55	0.2
7	4.5	0.2	6.2	0.6	7.2	0.1	2.5	0.2	2.5	0.4	2.5	0.7	4.3	0.2	5.6	>0.1	4.0	0.2	4.9	0.1	3.0	0.2
8	5.2	0.3	7.2	0.7	8.4	0.1	2.75	0.2	2.9	0.3	2.9	0.7	5.0	0.2	6.5	>0.1	4.6	0.1	5.65	0.1	3.45	0.2
9	5.9	0.2	8.2	0.3	9.4	0.2	3.0	0.2	3.3	0.3	3.3	0.5	5.7	0.2	7.4	0.1	5.2	0.1	6.4	0.1	3.9	0.2
10	6.6	0.1	9.2	0.5	10.8	0.2	3.25	0.2	3.7	0.2	3.7	0.4	6.4	0.2	8.3	0.1	5.8	0.1	7.15	0.1	4.35	0.2
11	7.3	0.1	10.2	0.1	12.0	0.1	3.5	0.1	4.1	0.2	4.1	0.1	7.1	0.1	9.2	0.1	6.4	0.1	7.9	0.1	4.8	0.1
12	7.5	0.0	10.8	0.0	12.1	0.0	5.0	0.0	4.1	0.2	4.3	0.1	7.3	0.0	9.5	0.0	6.5	0.0	8.0	0.0	5.9	0.0
Feature Type (riffle, run, or pool)	Riffle	Pool	Run	Run	Riffle	Run																

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects in order of up to downstream.

Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1

Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed:

*Bruce Martin*

Date:

5/23/07

*UNC 5-24-07*

*JK 5/25/07*

WBID# 0608  
Site# 8**Field Data Sheets for Recreational Use Stream Surveys****Data Sheet B - Site Characterization**  
(must be completed for each site)

Date & Time: <u>5/23/07 1345</u>	Site Location Description (e.g., road crossing): <u>Hwy T - BRIDGE CROSSING</u>
Personnel (Data Collectors): <u>P. MARTIN &amp; J. BOTH</u>	Facility Name: <u>AUBURN HILLS WWTF; MILAN WWTP</u>
Current Weather Conditions: <u>P. Cleary</u>	Permit Number: <u>MO 011931B; MO 0048151</u>
Weather Conditions for Past 10 days: <u>UNKNOWN</u>	
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input checked="" type="checkbox"/>	

**Site Locations:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)	
Site GPS Coordinates: UTM X: <u>0488492</u>	Y: <u>4440419</u>
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)	
Global Positioning System (GPS)	Interpolation
Static Mode	<input checked="" type="checkbox"/>
Dynamic Mode (Kinematic)	<input checked="" type="checkbox"/>
Precise Positioning Service	<input checked="" type="checkbox"/>
Signal Averaging	<input checked="" type="checkbox"/>
Real Time Differential Processing	<input checked="" type="checkbox"/>
HORIZONTAL ACCURACY ESTIMATE	
GPS Data Quality	Interpolation Data Quality
FOM	<input type="text"/> Meters
EPE	<input type="text"/> Feet or <input type="text"/> Meters
PDOP	<input type="text"/>
Source Map Scale: 1:24,000 1:100,000 Other _____	
<input type="text"/> Feet or <input type="text"/> Meters	

**Photos:**

Photo ID# (WBID_Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID_Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
0608-8-224	UPSTREAM, SITE #8 TRANSECT #1 - PIPE		
0608-8-225	DOWN STREAM; SITE #8 TRANSECT #1		

**Uses Observed\*:** (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments:				

**Data Sheet B - Site Characterization**

(must be completed for each site)

**Indications of Human Use\*: (attach photos)**

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input checked="" type="checkbox"/> Other:	
Comments:					

*Pipe upstream Transect #1*

**Stream Morphology:****Upstream View's Physical Descriptions:** Is there any water present at this view?  Yes  NoIf so, is there an obvious current?  Yes  No**Select one of the following channel features:**

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

**Downstream View's Physical Descriptions:** Is there any water present at this view?  Yes  NoIf so, is there an obvious current?  Yes  No**Select one of the following channel features:**

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

**Substrate\*:** (These values should add up to 100%).

<input type="checkbox"/> % Cobble	<input checked="" type="checkbox"/> 20 % Gravel	<input checked="" type="checkbox"/> 80 % Sand	<input type="checkbox"/> % Silt	<input type="checkbox"/> % Mud/Clay	<input type="checkbox"/> % Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

<i>No</i>
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**Water Characteristics\*:** (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

**Comments:** Please attach any additional comments to this form.

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

**Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.**Surveyor's Signature: *Alma Mart* Date of Survey: *5/23/07*Organization: *AE Solutions* Position: *Env. Specialist*

# MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>0608</u> Site #: <u>0608_8</u> (WBID_Site#)	Estimated Channel Incision: <u>21.0</u> (m) (height between low bank width and water) GPS Location (taken at transect 1): UTM X: <u>0488492</u> UTM Y: <u>4440419</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 23</u> (feet)	<b>Dissolved Oxygen</b> Date: <u>5/23/07</u> Time: <u>1345</u> Dissolved Oxygen: <u>6.34</u> (mg/L) Dissolved Oxygen: <u>70.5</u> (% sat) Specific Cond: <u>532</u> ( $\mu\text{S}/\text{cm}$ ) Water Temperature: <u>21.7</u> ( $^{\circ}\text{C}$ )
Average Stream Width: <u>7.5</u> (meters)	Length of Survey Segment: <u>150</u> (meters)	(20x average stream width)
Field Staff: <u>R. MARTIN</u> / <u>J. FOTH</u>		

## Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
1	0.8	0.1	9.0	0.1	8.4	0.1	0.7	0.1	0.5	0.1	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
2	1.7	0.1	1.65	0.2	1.5	0.3	1.3	0.2	0.8	0.1	0.9	0.2	0.65	0.3	1.0	0.5	1.1	0.3	1.0	0.5	1.2	0.4
3	2.6	0.2	2.3	0.2	2.6	0.5	1.9	0.3	1.1	0.1	1.4	0.3	1.2	0.3	2.0	0.4	2.1	0.3	1.8	0.7	2.2	0.7
4	3.5	0.3	2.95	0.2	3.7	0.6	2.5	0.3	1.5	0.2	1.9	0.3	1.75	0.3	3.0	0.3	3.1	0.7	2.6	0.7	3.2	0.6
5	4.4	0.3	3.4	0.3	4.6	0.7	3.1	0.3	1.8	0.2	2.4	0.3	2.3	0.2	4.0	0.3	4.1	0.7	3.4	0.7	4.2	0.6
6	5.3	0.4	4.25	0.3	5.9	0.7	3.7	0.3	2.1	0.2	2.9	0.2	2.85	0.2	5.0	0.1	5.1	0.6	4.2	0.6	5.2	0.3
7	6.2	0.4	4.9	0.3	7.0	0.9	4.3	0.4	2.4	0.2	3.4	0.2	3.4	0.2	6.0	0.0	6.1	0.5	5.0	0.4	6.2	0.3
8	7.1	0.4	5.55	0.4	8.1	1.0	4.9	0.3	2.7	0.2	3.9	0.1	3.95	0.1	7.0	0.1	7.1	0.3	5.8	0.4	7.2	0.2
9	8.0	0.4	6.2	0.6	9.2	0.8	5.8	0.2	3.0	0.2	4.4	0.1	4.5	0.1	8.0	0.2	8.1	0.2	6.6	0.3	8.2	0.2
10	8.9	0.5	6.85	0.5	10.3	0.6	6.1	0.1	3.3	0.1	4.9	0.1	5.05	0.1	9.0	0.2	9.1	0.3	7.4	0.1	9.2	0.1
11	9.8	0.1	7.5	0.2	11.4	0.2	6.7	0.1	3.0	0.1	5.4	0.1	5.6	0.1	10.0	0.1	10.1	0.3	8.2	0.1	10.2	0.1
12	10.0	0.0	7.5	0.2	12.0	0.2	7.2	0.0	3.7	0.0	6.4	0.0	7.7	0.0	10.3	0.0	10.2	0.0	9.2	0.0	10.5	0.0
Feature Type (riffle, run, or pool)	PoL	PoL	PoL	Run	Run	Run	Pool	Pool	Pool	Pool	Pool	Pool	Pool									

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects in order of up to downstream.

Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1

Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: Russ Martin Date: 5/23/07  
 On: 5-24-07 At: AKC 5/25/07

WBID# 0608  
Site# 9

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>5/23/07 1430</u>	Site Location Description (e.g., road crossing): <u>THUNDER ROAD</u>
Personnel (Data Collectors): <u>A. MARTIN &amp; J. FOTH</u>	Facility Name: <u>AUBURN HILLS NWTF; MILAN NWTF</u>
Current Weather Conditions: <u>Partly Cloudy</u>	Permit Number: <u>MO OII 9318; MO 0048151</u>
Weather Conditions for Past 10 days: <u>UNKNOWN</u>	
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input checked="" type="checkbox"/>	

#### Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)	
Site GPS Coordinates: UTM X: <u>0488697</u>	Y: <u>4439737</u>
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)	
Global Positioning System (GPS)	Interpolation
Static Mode	<input checked="" type="checkbox"/>
Dynamic Mode (Kinematic)	<input type="checkbox"/>
Precise Positioning Service	<input type="checkbox"/>
Signal Averaging	<input type="checkbox"/>
Real Time Differential Processing	<input type="checkbox"/>
HORIZONTAL ACCURACY ESTIMATE	
GPS Data Quality	Interpolation Data Quality
FOM <u>± _____ Meters</u>	Source Map Scale: 1:24,000 1:100,000 Other _____
EPE <u>± 42 Feet or ± _____ Meters</u>	<u>± _____ Feet or ± _____ Meters</u>
PDOP	

#### Photos:

Photo ID# (WBID_Site#_##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID_Site#_##)	Photo Purpose and Direction (upstream, downstream, other)
<u>0608-9-226</u>	<u>UPSTREAM SITE #9 TRANSECT #1</u>		
<u>0608-9-228</u>	<u>DOWNSTREAM SITE #9 TRANSECT #1</u>		

#### Uses Observed\*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

#### Surrounding Conditions\*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

**Data Sheet B - Site Characterization**  
(must be completed for each site)**Indications of Human Use\*: (attach photos)**

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: <i>None</i>					

**Stream Morphology:****Upstream View's Physical Descriptions:** Is there any water present at this view?  Yes  NoIf so, is there an obvious current?  Yes  No**Select one of the following channel features:**

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

**Downstream View's Physical Descriptions:** Is there any water present at this view?  Yes  NoIf so, is there an obvious current?  Yes  No**Select one of the following channel features:**

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

**Substrate\*:** (These values should add up to 100%.)

<input type="checkbox"/> % Cobble	<input checked="" type="checkbox"/> % Gravel	<input checked="" type="checkbox"/> % Sand	<input type="checkbox"/> % Silt	<input type="checkbox"/> % Mud/Clay	<input type="checkbox"/> % Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

<i>None</i>
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**Water Characteristics\*:** (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

**Comments:** Please attach any additional comments to this form.

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

**Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.**Surveyor's Signature: Alma Mart Date of Survey: 5/23/07Organization: AE SOLUTIONS Position: ENV. SPECIALIST

# MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>0608</u>	Site #: <u>0608-9</u> (WBID_Site#)	Dissolved Oxygen
		Date: <u>5/23/07</u> Time: <u>1430</u>
Estimated Channel Incision: <u>1.0</u> (m) (height between low bank width and water)		Dissolved Oxygen: <u>4.98</u> (mg/L)
GPS Location (taken at transect 1): UTM X: <u>0488697</u> UTM Y: <u>4439737</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 42</u> (feet)		Dissolved Oxygen: <u>60.5</u> (% sat)
Average Stream Width: <u>9.0</u> (meters)	Length of Survey Segment: <u>180</u> (meters) (20x average stream width)	Specific Cond: <u>536</u> ( $\mu\text{S}/\text{cm}$ )
Field Staff: <u>R. Martin &amp; J. Foth</u>		Water Temperature: <u>22.9</u> ( $^{\circ}\text{C}$ )

## Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)																					
1	0.1	0.1	0.4	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.5	0.1	0.2	0.1	0.3	0.1	0.1	0.1	0.1	0.0	0.4	0.1	0.1
2	0.9	0.1	1.35	2.01	1.4	0.3	1.2	0.3	1.3	0.2	6.0	0.1	0.9	0.4	1.05	0.2	0.5	0.5	1.1	0.8	1.1	0.6	
3	1.7	2.01	2.3	2.01	2.6	0.4	2.3	0.4	2.5	2.01	1.5	0.2	1.6	0.3	1.8	0.3	0.9	0.5	2.2	>1.0	2.1	>1.0	
4	2.5	0.1	3.25	0.1	3.8	0.3	3.4	0.3	3.7	0.4	2.0	0.3	2.3	0.3	2.55	0.2	2.3	0.6	3.3	1.0	3.1	1.0	
5	3.3	0.1	4.2	0.1	5.0	0.4	4.5	0.3	4.9	0.6	2.5	0.4	3.0	0.3	3.3	0.2	2.7	0.4	4.4	0.8	4.1	0.9	
6	4.1	0.2	5.15	0.1	6.2	0.4	5.6	0.4	6.1	0.7	3.0	0.4	3.7	0.3	4.05	0.2	3.1	0.2	5.5	0.7	5.1	0.8	
7	4.9	0.2	6.1	0.1	7.4	0.5	6.7	0.6	7.3	0.8	3.5	0.5	4.4	0.4	4.8	2.01	3.5	0.3	6.6	0.9	6.1	0.6	
8	5.7	0.2	7.05	0.1	8.6	0.5	7.8	0.5	8.5	0.9	4.0	0.5	5.1	0.2	5.55	2.01	3.9	0.2	7.7	0.8	7.1	0.5	
9	6.5	0.2	8.0	0.2	9.8	0.5	8.9	0.5	9.7	0.9	4.5	0.3	5.8	0.2	6.3	2.01	4.3	0.2	8.8	0.6	8.1	0.5	
10	7.3	0.2	8.95	0.2	11.0	0.8	10.1	0.4	10.9	0.6	5.0	0.2	6.5	0.1	7.05	2.01	4.7	0.1	9.9	0.3	9.1	0.4	
11	8.1	0.1	9.9	0.1	12.2	0.2	11.2	0.1	12.1	0.1	5.5	0.1	7.2	0.1	7.8	0.1	5.1	0.1	11.0	0.1	10.1	0.1	
12	8.5	0.0	9.9	0.0	12.2	0.2	12.0	0.0	12.5	0.0	5.8	0.0	7.3	0.0	8.0	0.0	5.4	0.0	12.0	0.0	10.7	0.0	
Feature Type (riffle, run, or pool)	Run	Riffle	Run	Pool	Pool	Pool	Pool	Pool	Run	Run	Run	Run	Run	Run	Run	Run	Run	Pool	Pool	Pool	Pool		

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Transects in order of up to downstream.

Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1

Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

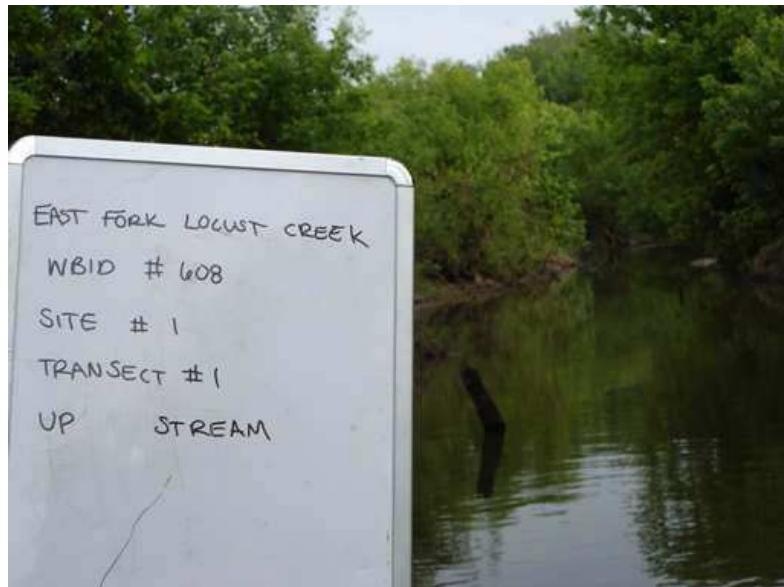
Signed:

Date:

5/23/07

RNC 5-24-07

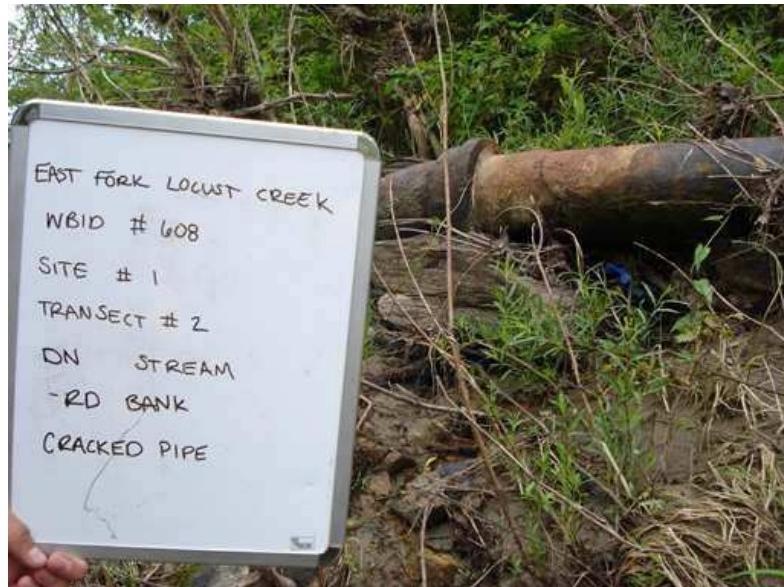
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Site# 1 Photo ID# 0608-1-207, Upstream



Site# 1 Photo ID# 0608-1-208, Downstream



Site# 1 Photo ID# 0608-1-210, Cracked pipe



Site# 1 Photo ID# 0608-1-209, Pipe

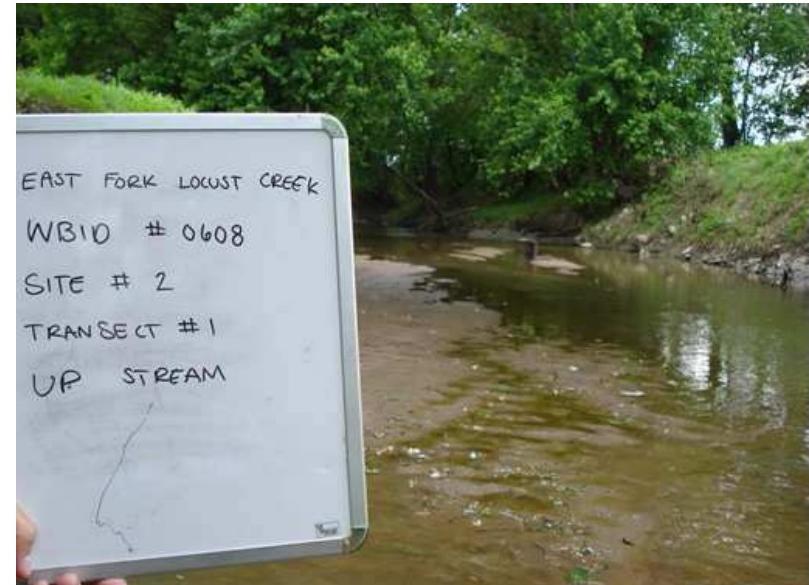
WBID# 608



Site# 1 Photo ID# 0608-1-211, Footprints

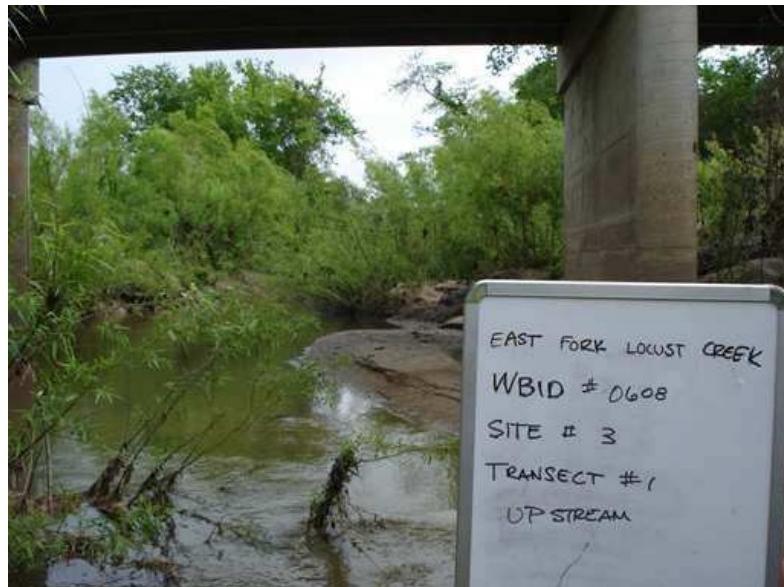


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Site# 2 Photo ID# 0608-2-213, Upstream

WBID# 608



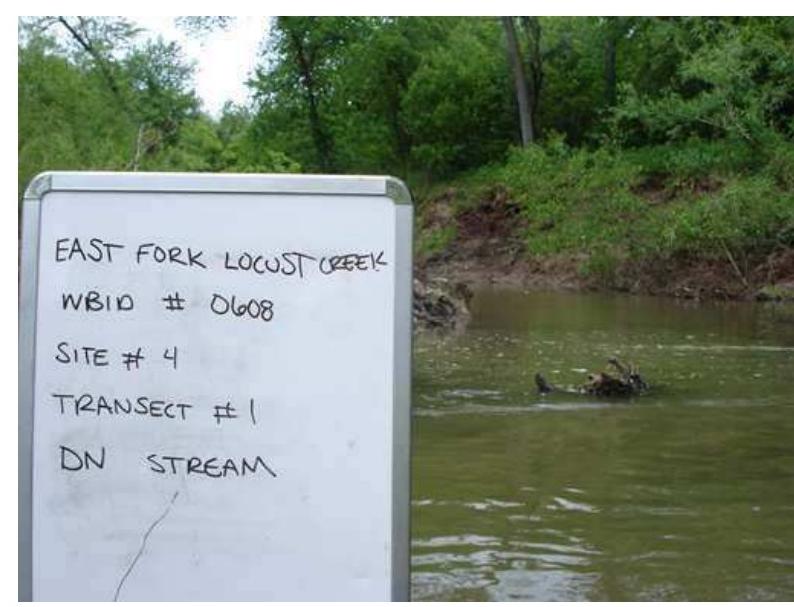
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Site# 3 Photo ID# 0608-3-215, Downstream

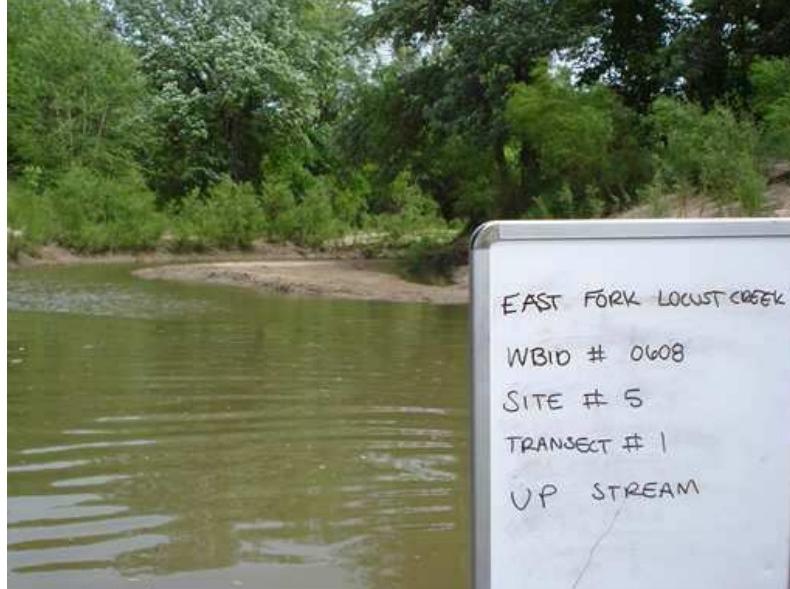


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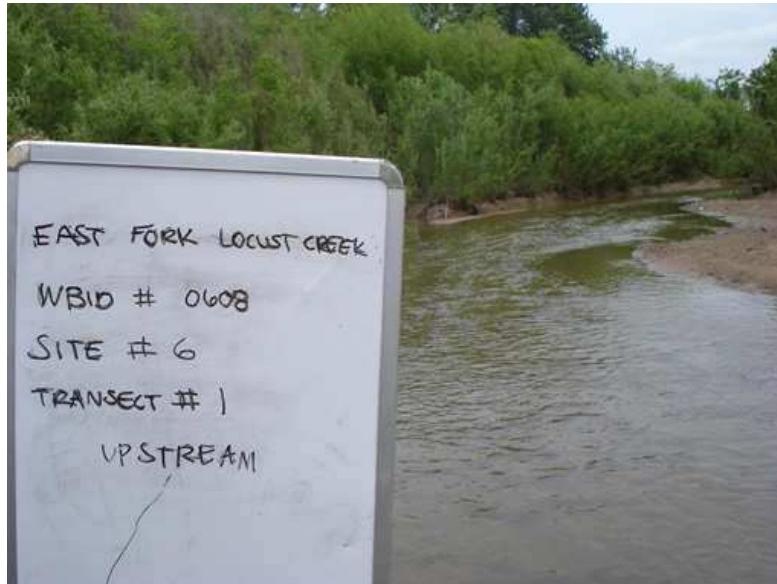
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Site# 5 Photo ID# 0608-5-218, Upstream



Site# 5 Photo ID# 0608-5-219, Downstream



Site# 6 Photo ID# 0608-6-220, Upstream



Site# 6 Photo ID# 0608-6-221, Downstream

WBID# 608



Site# 7 Photo ID# 0608-7-222, Upstream



Site# 7 Photo ID# 0608-7-223, Downstream

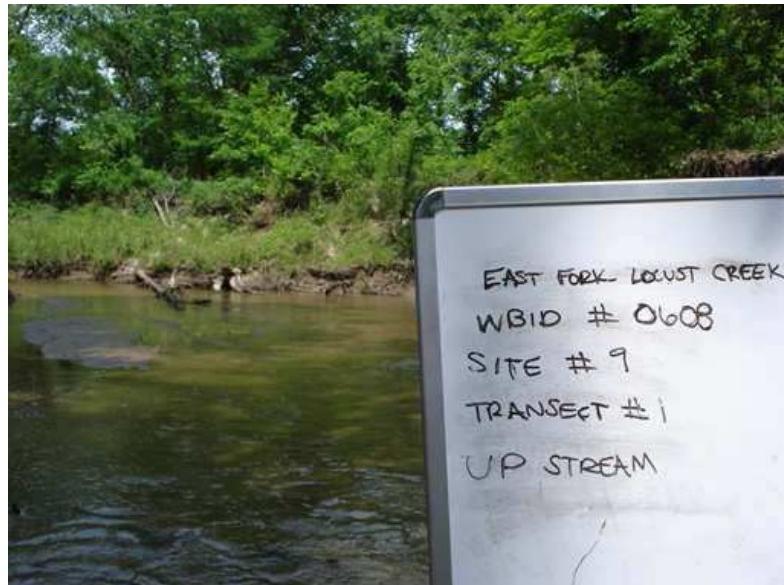


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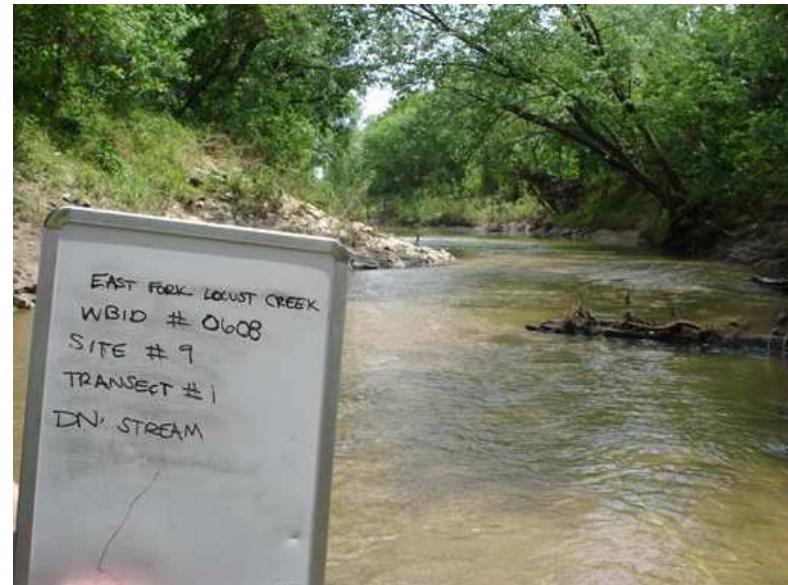


Site# 8 Photo ID# 0608-8-225, Downstream

WBID# 608



Site# 9 Photo ID# 0608-9-226, Upstream



Site# 9 Photo ID# 0608-9-228, Downstream